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THE EFFECT OF DIRECT INSTRUCTION IN VOCABULARY CONCEPTS ON
READING ACHIEVEMENT.

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THE EFFECTIVENESS OF TEACHING VOCABULARY CONCEPTS
THROUGH DIRECT EXPERIENCE AND THE INFLUENCE ON READING
ACHIEVEMENT AND CONCEPT ACHIEVEMENT WERE STUDIED. FORTY-TWO
FIFTH-GRADE PUPILS DIVIDED INTO 21 PAIRS MATCHED ON SEX AND
INTELLIGENCE WERE ASSIGNED RANDOMLY TO AN EXPERIMENTAL AND
CONTROL GROUP. FOR 19 WEEKS, TWICE A WEEK FOR A TOTAL OF 40
LESSONS THE EXPERIMENTAL GROUP WAS TAUGHT VOCABULARY
EMPHASIZING INSTRUCTION THROUGH DIRECT EXPERIENCE. THE
CONTROL GROUP, FOR THE SAME PERIOD OF TIME, RECEIVED REGULAR
INSTRUCTION WHICH STRESSED DICTION, STRUCTURAL ANALYSIS,
ANTONYMS, SYNONYMS, AND CONTEXT CLUES. ALTERNATE FORMS OF THE
IOWA READING TEST AND A VOCABULARY LIST WERE ADMINISTERED AS
A PRE- AND POST-TEST TO MEASURE READING ACHIEVEMENT AND
CONCEPT ACHIEVEMENT RESPECTIVELY. BOTH THE EXPERIMENTAL AND
CONTROL GROUPS GAINED SIGNIFICANTLY IN READING ACHIEVEMENT
AND CONCEPT DEVELOPMENT. NO SIGNIFICANT DIFFERENCE IN READING
ACHIEVEMENT BETWEEN THE GROUPS WAS FOUND. HOWEVER, THE
EXPERIMENTAL GROUP SHOWED SIGNIFICANTLY GREATER GAINS IN
CONCEPT ACHIEVEMENT. TEACHING PROCEDURES AND MATERIALS ARE
DESCRIBED. IMPLICATIONS, SUGGESTIONS FOR FUTURE RESEARCH, AND
REFERENCES ARE INCLUDED. (BK)

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THE EFFECT OF DIRECT INSTRUCTION IN VOCABULARY
CONCEPTS ON READING ACHIEVEMENT

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ABSTRACT

The effect of two techniques of teaching concepts on concept achievement and on reading achievement was evaluated by matching forty-two fifth grade students for intelligence and sex and assigning them to control and experimental groups. Reading and concept achievement were measured at the outset and conclusion. Concepts were taught by experience to the experimental group and by conventional instruction to the control.

Measured by the test of differences, with a predetermined level of significance of .05, both groups showed significant gains in reading and concept achievement. No significant difference in reading achievement between the experimental and the control group was found, but the experimental group showed significantly higher gains in concept achievement. Conceptualization can be taught in the classroom.

THE EFFECT OF DIRECT INSTRUCTION IN VOCABULARY CONCEPTS ON READING ACHIEVEMENT

The purpose of this study was to evaluate the effect of teaching vocabulary concepts through direct experience on reading achievement and on concept achievement. Although previous investigators had reported a relationship between reading achievement and concept level (1), and between experience and concept level (2), no study has yet reported the effect of experiential teaching of vocabulary on reading achievement and on concept achievement. To determine this effect, the performance of a group of fifth grade students taught by the experiential method was compared to that of a matched group taught by conventional instruction.

The previous literature considered the concept level of children primarily as a developmental factor (7), and most investigators placed the development of abstract thought at the chronological age of eleven (3). The individual's experience has been considered an important factor in developing concepts (4). References in the literature showed that children exposed to trips, dramatization, and other direct experiences increased their knowledge of concepts (5). Other comments in the literature suggested that the ability to conceptualize was an important factor in reading achievement (6). The implications of these findings was that a technique for teaching vocabulary could be developed to provide direct experience within the framework of the regular classroom setting. This study was designed to determine the effect of such a program on increases in reading achievement and concept achievement scores.

The hypotheses of the study were:

1. (a) The experimental group will show a significant increase in reading achievement.
1. (b) The experimental group will show a significant increase in concept achievement.
2. (a) The control group will show a significant increase in reading achievement.
2. (b) The control group will not show a significant increase in concept achievement.
3. (a) On the post-test, the experimental group will show an increase in reading achievement which will be significantly greater than the control group.
3. (b) On the post-test, the experimental group will show an increase in scores in concept achievement which will be significantly greater than the control group.

To test the hypotheses, forty-two students were divided into twenty-one pairs; each individual pair was matched in sex and IQ, and the members of each pair were then assigned alternately to groups which were randomly designated as control and experimental before the beginning of the teaching period. The subjects were tested at the outset in reading achievement and in concept achievement, and the groups were found to be comparable. Reading achievement was determined by the raw scores on the Iowa Reading Test. Concept achievement was determined by the student's responses to a vocabulary list. Individual responses were categorized and assigned weighted values; the total of these numerical values constituted a concept achievement score. To establish reliability, the ratings of the vocabulary responses were verified by an outside teacher of reading.

During the instructional period of nineteen weeks, the experimental group was taught a series of lessons in vocabulary which emphasized instruction through direct experience. The control group was taught through

the conventional method of vocabulary instruction with dictionary usage, structural analysis, antonyms and synonyms, and context clues. At the close of the experimental period, both groups were tested with alternate forms of the reading achievement test and the concept achievement test.

Teaching Procedures

The experimental group met twice a week at 8:50 a.m. on Tuesday and Friday, for a total of forty lessons. The control group met twice a week at the same hour on Monday and Thursday for an equal period of time.

Both groups used reading material drawn from the social studies and literature curriculum which the fifth grade was studying. The topic was Greek civilization, and the books used were: Greek Myths by Olivia Coolidge (5), and The Olympiad by A. L. Mayer (8). Greek Myths contains tales of the mythological figures and an additional section which is an adaptation of the Iliad. The Olympiad is a historical novel, recounting the tale of a slave boy who rises to fame as a consequence of his wrestling prowess. The story provides an interesting and accurate picture of life during the fifth century in Greece. All the words taught to both groups were derived from these two sources: both groups were taught identical words.

The general reading plan for the control group was as follows:

- 1) Presentation on the blackboard of approximately five words in five sentences.
- 2) Elicitation of the meaning of the words from students in oral discussion, or use of the dictionary to find the meaning if it is totally unknown by everyone.
- 3) A fifteen minute period of individual silent reading in one of the two books mentioned.
- 4) A short period of comprehension questions on the material read.

- 5) Emphasis on some aspect of vocabulary study or structural analysis.
 - a) Study of derivations, including dictionary entries.
 - b) Study of prefixes and suffixes.
 - c) Understanding use of context clues to develop meaning.
 - d) Figurative language, foreign words, synonyms and antonyms.

The general reading plan for the experimental group was as follows:

- 1) Presentation on the blackboard of the same words as the control group.
- 2) Discussion of the meaning with emphasis on its attributes and its classification: "The javelin is a weapon. What other weapons have we read about? How does a javelin differ from a spear? What is the same about them? Which would include more things, weapons or spears?"
- 3) Individual silent reading for fifteen minutes in one of the two books mentioned.
- 4) A short period of comprehension questions.
- 5) a) Some direct experience with the words which were introduced at the beginning of the lesson. This experience took various forms:
 - 1) Demonstrations

ex. Snare was illustrated by a model of a mouse being caught in a snare.
 - 2) Sensory experience

ex. Doric, Ionic and Corinthian columns were learned by reproducing one either in clay or by drawing.
 - 3) Audio-visual experience

Amphora, a large jar used by the Greeks, was illustrated with other vocabulary words in selected films and film strips.
 - 4) A trip to the museum.
- b) Where direct experience was not feasible, exercises which emphasized practice in classifying, noting similarities and differences, and in detecting relationships, were done by the students on individual worksheets. For example, a worksheet which offered the following type of problem was part of a lesson.

- 1) Find the word that does not belong.

ex. cup, teaspoon, knife, fork, tablespoon.

The exercise above provided practice in identifying positive and negative instances and recognizing critical attributes.

- 2) A list of headings and a list of words was provided with directions to put the words under the appropriate headings, i. e., peas, beans, etc. under lentils; myrtle, laurel, under bushes; architect, shipwright, under occupations. (These were all words which had been introduced or found in the reading.)

The above exercises offered practice in applying the verbal label to the concept.

- 3) Examples of analogies to be completed through multiple choice questions, i. e., bird: feathers; fish: (1) scales, (2) tails, (3) song, (4) beak, and (5) mouth.

Relationships were taught through analogies. Portions and variations of these exercises were used during the experimental period.

The aim in the teaching procedure of the experimental group was to incorporate systematically and effectively the processes of conceptualization into the classroom study of vocabulary and to label these concepts constantly. Carroll enumerates the factors which are probably sufficient to concept formation as "(a) the number, sequencing, or timing of the instances presented to the individual, (b) the reinforcements given to the individual's responses, and (c) the individual's orientation to the task." (4)

All results were analyzed by the t test of differences between matched pairs. The following results were obtained:

- 1) The experimental group showed a significant increase in scores in reading achievement. The increase was significant at the .001 level.
- 2) The experimental group showed a significant increase in concept level scores. This increase was also significant at the .001 level.

- 3) The control group showed a significant increase in reading achievement. This increase was also significant at the .001 level.
- 4) The control group, contrary to expectations, showed a significant increase in concept level. This increase was also significant at the .001 level.
- 5) There was no statistically significant difference between the increase in reading achievement between the experimental and the control group.
- 6) The experimental group showed an increase in concept level which was significantly higher than the control group. This was significant at the .05 level.

Within the limitations of this study, the following conclusions can be stated.

- 1) Children who are taught vocabulary through direct experience will show an increase in reading achievement scores and in concept achievement scores.
- 2) The increase in concept achievement shown by children who are taught by this experiential method is significantly greater than the increase shown by children who are taught with the conventional vocabulary instruction.
- 3) Concepts in vocabulary can be taught in the classroom as a discrete sub-skill in the development of vocabulary and comprehension.

Implications and Suggestions for Research

The results and conclusions of this study lead to important implications. Reading specialists should become more conversant with the field of conceptualization. This is the meeting ground of the psychologist and the educator. It is the area where the psychological techniques of measurement of thinking processes, and the educator's concern with the development of these processes must converge.

With this relationship in mind, additional research to study both of these aspects might be undertaken. As Vygotsky (7) suggests, a study which would analyze the continuity or transfer of the concepts as they are

obtained in the psychology laboratory and the concepts that occur in relation to words and meanings would indicate the relationship between these two phenomena.

The findings of the research described in this report have implications for the teacher and for classroom procedures. Experiential teaching is a useful method in reading instruction and in improving concept achievement. Sensory experience should be provided at different age levels and in all content fields. Teachers and educators should realize the potential values of examining and of manipulating objects in developing concepts.

Vocabulary should be taught in terms of experience, never in isolation. If direct experience is not always available, the next best approximation is through audio-visual material and demonstration. Words to be taught and material to be read should be carefully selected to correspond to the appropriate experiential level of the child, or else the conceptual meaning may not be understood. Vocabulary, which often has different levels of conceptual meanings, should be introduced and reintroduced at different curriculum levels. The idea of fixing an individual word at a particular grade level becomes debatable. The results of the research undertaken here suggest that one meaning of a word may be appropriate at a second grade level of conceptualization and another meaning might only be expected at the fifth grade level of conceptualization. This supposition implies that readability formulas must include a measure of the level of difficulty of concepts as these concepts are used in the content, if the readability formula is to be a helpful one.

The confluence of intelligence test scores and concept level is another area for further investigation. Frequently intelligence test scores and reading achievement differ within an individual. In some cases, the IQ may include the abstract attitude, in others it may be missing. Is the concept

level most closely related to the IQ, the CA or the MA? Braun suggests that the critical factor in the handicapped reader of normal intelligence is low concept level and raises a question regarding the appropriateness of using the IQ as a basis of expectancy of reading achievement (1). A study investigating the use of concept level as a predictive indicator of reading achievement would be fruitful and might offer some alternate measure for the testing of children from deprived backgrounds.

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